FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

SEP 13 1991

IN REPLY REFER TO:

RM-7617

CN910170

Mr. Mark A. Stachiw, Esq.
Attorney for PacTel Paging
Three Forest Plaza
12221 Merit Drive
Suite 800
Dallas, Texas 75251

Dear Mr. Stachiw:

This responds to the Petition for Rulemaking you filed on behalf of PacTel Paging requesting the Commission to allocate the 930-931 MHz band to advanced architecture paging (AAP).

On January 23, 1991, Telocator filed a Petition for Rulemaking that requests the Commission allocate the 930-931 MHz band for an advanced messaging service (AMS). The Commission accepted the petition, RM-7617, and requested comment on it by Public Notice (February 7, 1991). The issues raised by your petition already are before the Commission in this proceeding. The public interest will be best served by a single record that addresses all aspects of advanced technology paging. Therefore, I am denying your petition without prejudice but accepting it as a late-filed comment to RM-7617.

Your request for a pioneer's preference will be considered on its own merits. Based upon our preliminary review, your preference request appears to meet the procedural requirements specified in the Report and Order in GEN Docket No. 90-217 (FCC 91-112, May 13, 1991). Specifically, there is an ongoing proceeding, RM-7617, and you applied for experimental licenses (FCC File Nos. 1658, 1659, 1660, 1661, and 1662 -EX-PL-90) detailing your proposed AAP service prior to July 30, 1991.

Accordingly, your petition IS DENIED pursuant to the authority delegated to the Chief Engineer by Section 0.241 of the Commission's Rules, 47 C.F.R. Section 0.241. A copy of your petition will be included in the public record of RM-7617.

Sincerely,

Thomas P. Stanley

Thomas P. Stanley
Chief Engineer

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:	)	
	)	
Amendment of the Table of	)	RM- 7617
Frequency Allocations and	)	
Part 22 of the Rules Relative	)	
to the Allocation of Reserve	)	
Spectrum for a Common Carrier	)	
Advanced Architecture Paging	)	
Service	)	

PETITION FOR RULEMAKING

PacTel Paging
Three Forest Plaza
12221 Merit Drive
Suite 800
Dallas, TX 75251
(214) 458-5200

MARK A. STACHIW
Attorney for PacTel Paging

August 2, 1991

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Summary

PacTel Paging ("PacTel") is petitioning for a rulemaking to allocate spectrum to Advanced Architecture Paging ("AAP"), a novel and new service.

AAP is an unformatted regional paging service which does not suffer from the same constraints as existing paging systems. AAP is a digital data stream offered to end users without imposing internal formatting limitations. AAP is a platform upon which existing and enhanced messaging capabilities, including enhanced character sets, low and high resolution graphics, video, E-Mail, facsimile, digitized voice and lengthy alphanumeric messages will be able to be offered and to co-exist. As an additional benefit, AAP also offers the capability to subscribers of encrypting their messages.

PacTel is proposing an allocation of the remainder of 930-931 MHz not allocated by the Commission to other paging services. An appropriate licensing scheme is proposed.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of the Table of	)	
Frequency Allocations and	)	
Part 22 of the Rules Relative	)	RM-
to the Allocation of Reserve	)	
Spectrum for a Common Carrier	)	
Advanced Architecture Paging	)	
Service	)	

PETITION FOR RULEMAKING

PacTel Paging ("PacTel"), by its attorney and pursuant to Section 1.1401 of the Commission's Rules, hereby submits its Petition for Rulemaking requesting the Commission to amend its Table of Frequency Allocations and Part 22 of its Rules to permit the use of all of the reserve spectrum in the 930-931 MHz band for a common carrier Advanced Architecture Paging service. In support of this petition, PacTel respectfully shows the following:

I. Service Description

1. Advanced Architecture Paging ("AAP") is a novel and new service which will permit subscribers to format the one-way paging data stream into various forms.[1] Currently, one-way paging services have been offered on a much more circumscribed basis. Constraints imposed by industry formatting standards and manufacturers' equipment design decisions have limited one-way paging to a narrow set of

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[1] Attached as Exhibit 1 is PacTel's Request for a Pioneer's Preference for the AAP service which is being filed concurrently with this Petition for Rulemaking.

options regarding format and composition. Available digital paging technology generally limits recipients to receiving messages formatted either in 4-bit (numeric) or 7-bit (alphanumeric) characters. Thus, not only the length but the content of the transmission is effectively limited. For example, a 7-bit alphanumeric format will only accommodate numbers and upper case letters, not any enhanced graphic characters, such as those found on personal computers (those characters above ASCII decimal 128). Graphics, facsimile and video do not conform to existing format and composition limitations, and thus are not available for transmission by existing paging systems.

2. AAP is an unformatted regional paging service which does not suffer from the same constraints as existing paging systems. AAP is a digital data stream offered to subscribers without imposing internal formatting limitations.[2] Therefore, not only are 4-bit and 7-bit formats available, but innumerable other word sizes and compositions are possible.[3] Ultimately, AAP could permit all digital data types to be distributed to the subscriber,

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[2] Some low level formatting will, of course, be necessary in order to deliver the message to the subscriber (i.e., cap code, forward error correction). There will, however, be no internal formatting inside the message portion of the page, except when requested by the subscriber.

[3] A carrier could, of course, offer to format the paging data stream for the subscriber into existing 4-bit and 7-bit formats.

thereby providing the platform upon which both existing and enhanced messaging capabilities, including enhanced character sets, low and high resolution graphics, video, E-Mail, facsimile, digitized voice and lengthy alphanumeric messages, will be able to be offered and to co-exist. As an additional benefit to the subscriber, AAP also offers the possibility of subscribers being able to encrypt their messages at the bit level, thus ensuring confidentiality.[4] PacTel has previously submitted to the Commission a notice detailing PacTel's planned experimentation with AAP under its ultimate parent's, Pacific Telesis Group's, experimental authorizations.[5]

3. Examples for the use of the AAP service abound. For example, detailed maps and photographs could be sent to the subscriber using either facsimile or digital video. In addition, E-Mail would allow salespersons and technicians to be always in contact with the office and receiving up-to-date information necessary to perform their jobs. Furthermore, digitized voice mail could also be delivered to

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[4] Currently, paging does not employ any encryption, nor is any available except at the character level (i.e., character substitution performed manually by the subscriber).

[5] Attached as Exhibit 2 is Pacific Telesis Group's Notice of Details of the Experimental Program. FCC File No.s 1658-EX-PL-90 through 1662-EX-PL-90.

the subscriber.[6] Subscribers would be able to use these services not only at the office, but also at home and while on vacation because of the regional nature of the service.

4. In a variety of other telecommunications contexts other than paging, common carriers offer subscribers an open channel of communications and leave it to the subscriber to determine the precise use to which the channel will be put. For example, in the landline telephone business, a wireline carrier will offer a subscriber a T-1 dedicated facility. The subscriber will determine how it wants to break it up and utilize the offered capacity. The Subscriber is also able to select the format and message composition to be utilized in transmitting information over the facility. AAP is similar to a T-1 facility because it also allows the subscriber to determine the appropriate formatting and message composition for its messages.

5. As discussed more thoroughly below, AAP is a regional service and should be licensed as such. Currently, conventional paging services are experiencing increased demand for regional coverage. With the increased air traffic among cities, regional demands for service are

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[6] Digitized voice is not possible today because the current voice digitizing rate is between 8-16 Kilo bits. A state-of-the-art paging system today only throughputs 1200 baud (or 1.2 Kilo bits). It would take approximately 4 seconds to send every second of digitized voice. With increased baud rates, the correlation of digitized voice-to-transmission speed can be closer to 1:1 or better.

expected to grow. For example, in the San Diego market, most subscribers demand Southern California coverage as opposed to just San Diego coverage. Because of these demands, PacTel has been required to file for 931 MHz paging channels throughout Southern California. However, PacTel has not been able to achieve a second regional frequency because of the method the Commission uses to authorize stations (i.e., Carey contours and Interference contours). Furthermore, in some areas, commuters are traveling over great distances for work and relaxation. It is extremely doubtful that subscribers will demand less than regional coverage of their AAP service when they currently demand regional coverage for their conventional paging services.

II. Public Need

6. There is a public need for AAP service. Channels for conventional paging service in some of the top 10 metropolitan areas in the United States have been exhausted. For example, Telocator, an industry association of personal communications service providers, has previously filed a request for rulemaking detailing the need for additional spectrum for paging services.[7] AAP may not be offered on existing channels today for several reasons. First, existing channels are not regional, so a licensee may

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[7] In the Matter of Telocator Petition For Rulemaking to Amend Part 22 of the Commission's Rules Concerning the Use of 930-931 MHz For An Advanced Messaging Service, FCC RM-7617.

be blocked by other carriers from building a regional system. Second, depending on the results of PacTel's experimentation, AAP may require different channel spacing than can be accommodated in the existing 25 KHz channel spacing. Third, AAP will require higher baud rates in order to offer the necessary capacity. With current channels already loaded, increased baud rates on existing channels may not be feasible or possible. Since AAP will provide the platform upon which existing and future advanced paging services can be provided, AAP has an obvious and immediate need.

III. Allocation Requirements

7. Three principles should be taken into consideration in allocating spectrum to AAP. First, the geographic scope of an AAP license must be considered. Second, a determination must be made regarding the amount of spectrum to be allocated to AAP. Third, the Commission should consider the technical standards, if any, to be imposed on the AAP service. With these considerations in mind, the Commission would then need to determine the best source of spectrum for this necessary and innovative service. These principles are discussed more thoroughly below.

A. Geographic Scope of the License

8. An AAP license must be regional. Currently, conventional 931 MHz paging systems are assigned on the

basis of 20 mile Carey contours and 70 mile interference contours. This authorization methodology has lead to a patchwork of frequencies being available over a regional area. For example, in Southern California, 931.9625 MHz is assigned to Meta RCC in Los Angeles, but to PacTel at Edom Hill and Santa Ynez (both outside of Los Angeles). Such an assignment schema limits the utility of such authorizations because neither licensee can offer Southern California regional service. One-way paging subscribers are in ever increasing numbers demanding regional coverage. Because of the robust nature of AAP, subscribers will demand at least the same coverage areas as the most extensive existing conventional paging systems.[8]

9. PacTel proposes that the Commission authorize AAP licensees for regional licenses. PacTel proposes three geographic regions in the United States: a Pacific Region, a Midwest Region, and an Atlantic Region. The Pacific Region would include all states wholly within the Pacific, Alaska, Standard (Hawaii), and Mountain Time zones.[9] The Atlantic Region would include all states wholly within the Eastern

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[8] Competitors such as PageNet already cover multistate regions, including California, Arizona and Nevada.

[9] These states include Hawaii, Alaska, Washington, Oregon, California, Idaho, Nevada, Utah, Arizona, Montana, Wyoming, Colorado, and New Mexico.

Standard time zone, except Michigan, Indiana, and Ohio.[10] The Midwest Region would include all other states.[11] PacTel submits that these geographic regions share considerable economic, political, and cultural ties. For example, there is considerable air travel between cities in these regions, and, in some cases, extensive commuter traffic between cities in these states.

10. A license would permit the licensee to construct base stations within the geographic region without need of additional Commission authorization other than notification of construction of facilities. As is discussed in greater detail below, a license of this nature can and should be coupled with affirmative requirements that the licensee construct a sufficient number of base station facilities to establish a regional service within a prompt time frame.

B. Spectrum Allocation

11. PacTel proposes that the remainder of the 1 MHz of spectrum between 930-931 MHz not allocated to other paging

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[10] These states include Maine, New Hampshire, Vermont, Massachusetts, New York, Connecticut, Rhode Island, New Jersey, Pennsylvania, Maryland, Delaware, District of Columbia, West Virginia, Virginia, North Carolina, South Carolina, Georgia, and Florida.

[11] These states include North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, Texas, Minnesota, Iowa, Missouri, Arkansas, Louisiana, Wisconsin, Illinois, Michigan, Indiana, Ohio, Kentucky, Tennessee, Mississippi, and Alabama.

services by the Commission be allocated to AAP.[12] AAP is a form of advanced paging services for which this frequency band has been reserved.

12. At this time, it is too soon to determine the optimal channel spacing. It is unclear whether 25 or 50 KHz channel spacing (or something in between) would be appropriate. PacTel is currently experimenting to determine the optimal channel spacing to support AAP. However, PacTel believes that the channel spacing will be between 25 and 50 KHz. PacTel will, through its quarterly reports to the Commission on its experimental program, keep the Commission informed as to PacTel's progress in resolving this aspect of spectrum allocation.

C. Technical Standards

13. PacTel proposes that, to the extent possible, the current Part 22 Rules regarding 931 MHz paging apply. However, these Rules may need to be modified to support AAP. First, because of the regional nature of the service, the height/power limitations of AAP should be the same as the

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[12] PacTel has proposed, via Petition for Rulemaking, that 75 KHz of this band could be allocated by the Commission for Ground-Air Paging ("GAP"). Attached as Exhibit 3 is a copy of PacTel's Petition for Rulemaking for GAP.

nationwide paging frequency rules.[13] Second, as discussed above, the channel spacing and modulation requirements may need to be changed to conform with PacTel's findings through its experimental program.

IV. Licensing Standards

14. In making an allocation of spectrum from the reserve band, the Commission should give consideration to the licensing standards and regulatory context that will be used. PacTel has given these matters considerable thought, and proposes the following:

A. Regulatory Status

15. In National Association of Regulatory Utilities Commissioners v. FCC, 525 F. 2d 630 (D.C. Cir. 1976) ("NARUC I"), the Court found, inter alia, that "to be a common carrier, one must hold oneself out indiscriminately to the clientele one is suited to serve."[14] The Court also stated that a "second prerequisite to common carrier status ... is the requirement ... that the system be such that customers transmit intelligence of their own design and choosing."[15]

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[13] Rule 22.505(c)(2). This Rule permits a nationwide licensee to transmit at 3500 Watts E.R.P. regardless of height. These Rules would need to be modified with respect to perimeter sites near the Regional boundaries. In those instances, the current height/power rules for 931 MHz paging would apply. See, e.g., Sections 22.501, 22.502, 22.505, and 22.506.

[14] NARUC, at 641.

[15] National Association at Regulatory Utilities Commissioners v. F.C.C., 533 F. 2d 601, 609 (D.C. Cir 1976) ("NARUC II).

In view of these directives, AAP would appropriately be regulated as a common carrier service. The fundamental purpose of the allocation would be to create a regional system available to all prospective subscribers on a non-discriminatory basis to meet their communications needs. For the same reasons that the Commission authorized the 931 MHz paging allocation for common carrier services, AAP should be accorded common carrier status.

16. The Commission should, however, forbear from applying the full panoply of common carrier regulation to AAP just as it does with respect to 931 MHz paging. AAP providers will be non-dominant because the allocation for spectrum will permit numerous licensees in each region; thus insuring competition. Applying the reasoning in the Commission's Competitive Carrier Rulemaking, 85 FCC 2d 1, 10 (1980), AAP should be subject to reduced and/or streamlined regulation. If AAP providers are deemed to be required to file rates with the Commission for interstate services, such filings should be subject to a presumption of lawfulness, expedited review procedures, and should not require cost justification materials.[16]

17. Additionally, the Commission should assert exclusive jurisdiction with respect to the technical aspects of this service because AAP will largely be an interstate

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[16] See, e.g., Fifth Report and Order, 98 FCC 2d 1191, 1192 (1984).

communications service which could be jeopardized if it was subject to a patchwork of state regulations on technical aspects of the service. To the extent that a AAP message originates and terminates in the same state, such communications must be considered an integral non-separable part of the interstate communications network; thus, national standards for technical aspects of the service must be regulated by the Commission. Furthermore, the Commission should also preempt state regulation on construction and entry/exit with respect to AAP. However, to the extent that AAP service providers are able to configure their system and market a service which originates and terminates in a single state, the Commission should not preempt that state's regulation with respect to entry/exit and rate regulation.

B. Licensee Qualifications

18. Applicants seeking licenses in the AAP service should be required to meet four qualifying criteria: (1) financial qualifications, (2) technical qualifications, (3) service commitments, and (4) loading requirements. Each of these will be discussed in greater detail below.

1. Financial Qualifications

19. Applicants should be required to demonstrate that they have the financial resources needed to construct and operate a regional system. Unlike conventional paging services which can be implemented on a local basis with a relatively small capital investment, the provision of AAP

will require a substantial investment of capital. Because of the breadth of the license, the Commission cannot afford to have some licensees only construct portions of systems, leaving the rest of the region unserved. PacTel recommends that applicants for AAP licenses be required to provide full particulars regarding the costs of construction and operation of the proposed facilities for the first three years, together with other initial expenses. Drawing upon its experience in the cellular license arena, firm financial commitments should be required for each license sought in order to ensure that applicants have the seriousness of purpose and intent to provide the proposed services.[17]

2. Technical Qualifications

20. Applicants should be required to demonstrate their qualifications to operate an AAP service. Such a demonstration should include (i) whether the applicant has any experience constructing and operating a conventional paging system, (ii) the applicant's ability to construct and operate an AAP system, and (iii) the applicant's experience in telecommunications. An applicant should not be allowed to rely on the technical expertise of outside consultants unless the applicant can demonstrate a firm commitment by the consultant to provide those services through the first three years of operation of the AAP system. In addition, an applicant should be required to provide a complete technical

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[17] See, e.g., Section 22.917.

description of its proposed system.

3. Service Commitments

21. The Commission should adopt minimum service requirements for licensees. PacTel proposes that AAP licensees be required to construct base stations in at least fifty percent of the metropolitan areas in the region, with a population exceeding 500,000, within the first 18 months of the issuance of the authorization. PacTel further suggest that the licensee be required to construct base stations in at least seventy-five percent of the metropolitan areas in the region, with a population in excess of 500,000, within the first five years of the authorization. PacTel also suggests that an applicant be required to provide service to the public within the metropolitan areas within the first 18 months after the issuance of the authorization. A standard of this nature will obligate licensees to adopt a regional focus as they proceed with the construction of their systems.

4. Loading Requirements

22. PacTel suggests that applicants for additional authorizations in the AAP service be required to show that their existing systems have been loaded.[18] This requirement would ensure that additional channels being licensed to applicants are truly needed, and that the applicant is not hoarding or warehousing frequency.

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[18] See, e.g., Section 22.516.

C. Selection Method

23. Exclusive radio common carrier paging licenses generally are assigned by lottery. AAP would appear to be an appropriate service for the use of random selection techniques, since the number of interested providers of service will, no doubt, exceed the number of available channels. The Commission must, however, adopt rules and procedures that will reduce speculation for these licenses. Specifically, PacTel recommends that:

(a) Threshold criteria regarding financial qualifications, technical qualifications and minimum service proposal requirements must be strictly enforced.

(b) Applicants should be restricted from filing or participating in more than one application for each region at a time.

(c) Restrictions on the alienation of an AAP authorization, including a transfer of control, prior to the initiation of regional service must be adopted and strictly enforced. A three year holding period should be instituted.

Conclusion

PacTel respectfully petitions the Commission to initiate a rulemaking proceeding to allocate spectrum and adopt rules for Advanced Architecture Paging as set forth herein. By separate filing, PacTel is requesting a Pioneer's Preference with respect to this novel new service proposal.

Respectfully submitted,

PACTEL PAGING

PacTel Paging
Three Forest Plaza
12221 Merit Drive
Suite 800
Dallas, Texas 75251
(214) 458-5200

Dated: August 2, 1991

MARK A. STACHIW
Attorney for PacTel Paging

EXHIBIT 1

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Request of PacTel Paging for a Pioneer's Preference Respecting the Advanced Architecture Paging Service	)	File No.

REQUEST FOR PIONEER'S PREFERENCE

PacTel Paging ("PacTel"), by its attorney and pursuant to Sections 1.402 and 1.403 of the Commission's Rules, hereby respectfully requests a Pioneer's Preference in the licensing process for the Advanced Architecture Paging ("AAP") service. PacTel Paging has proposed the AAP service by a separate Petition for Rulemaking filed concurrent herewith. With respect to this request for a Pioneer's Preference, PacTel respectfully shows the following:

1. In its Report and Order in General Docket No. 90-217, FCC 91-112, released May 13, 1991 (the "Pioneer's Preference Order"), the Commission adopted rules that provide preferential treatment in its licensing processes for parties requesting spectrum allocation rule changes who have made a significant contribution to the development of new communications services and technologies. PacTel requests such a preference in connection with the licensing process for AAP.

2. Attached hereto as Exhibit 1 is a copy of PacTel's Petition for Rulemaking for AAP being filed concurrent

herewith ("Petition"). The Petition contains detailed information concerning PacTel's proposal respecting the proposed service, the frequencies to be used, and the necessary and appropriate licensing policies. As set forth in more detail below, PacTel is entitled to a Pioneer's Preference for AAP.

3. The Pioneer's Preference Order requires either (a) a rulemaking petition requesting allocation of spectrum for the proposed service or (b) rule amendments which would permit accommodation of the proposed technology within the existing rules.[1] PacTel has satisfied this threshold requirement by filing the Petition concurrent with the filing of this request. The Petition seeks allocation of spectrum from the 930-931 MHz reserve for the proposed AAP service. 930-931 MHz is currently held in reserve for Advanced Paging Services.

4. The Commission has recognized that "the key determinate of whether a Pioneer's Preference would be awarded is the degree to which a proposed service ... is 'new' or 'novel' ... ."[2] PacTel has drawn upon its extensive experience as a major provider of paging services in the United States to conceive and propose a novel and new service which could act as a platform for the introduction of advanced paging services including enhanced character

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[1] Pioneer's Preference Order, at para. 37.

[2] Id. at para. 43.

sets, low and high resolution graphics, video, E-Mail, facsimile, digitized voice and lengthy alphanumeric messages. Historically, paging services, because of industry formatting standards and manufacturer's equipment design decisions, have been limited to either 4-bit (numeric) or 7-bit (alphanumeric) characters. AAP would unleash one-way paging services from the constraints imposed by 4-bit and 7-bit formats and word composition to allow for a variety of enhanced services. Ultimately, AAP might permit all digital data types to be distributed to the subscriber regardless of format or composition. PacTel is the innovator of this novel and new service and, to the best of PacTel's knowledge, no one else has proposed such a service.

5. The Commission has stated that it will award a Pioneer's Preference to an entity that demonstrates that it

> has developed an innovative proposal that leads to the establishment of a service not currently provided or a substantial enhancement of an existing service, provided, that the rules adopted for the new or enhanced service are a reasonable outgrowth of the proposal and lend themselves to the grant of a preference and a license to the pioneer.[3]

AAP is both a novel and new service and a substantial enhancement of an existing service (i.e., traditional paging services). Assuming that the rules adopted by the Commission for this novel and new service are a reasonable

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[3] Id. at para. 47.

outgrowth of PacTel's Petition, the basis for a Pioneer's Preference will be established and PacTel will be entitled to such a preference.

6. Although the Commission has not specifically concluded that an experimental authorization is required for receiving a pioneer's preference,[4] PacTel has notified the Commission that it is experimenting with AAP under its ultimate parent's, Pacific Telesis Group's, experimental authorizations.[5] Attached as Exhibit 2 is a copy of PacTel's Notice to the Commission of the details of its experimentation with respect to AAP. PacTel's experimentation is designed to determine the technical feasibility of AAP. PacTel will test various channel spacing between 25 KHz and 50 KHz, increased baud rates, and enhanced forward error correction.

7. PacTel's request for a Pioneer's Preference is timely filed with the Commission. In the Commission's June 13, 1991 Public Notice regarding Filing Requirements for Pioneer's Preference, the Commission stated that,

> "...for Commission proceedings initiated before April 9, 1991, a preference applicant will not be required to submit a petition for rulemaking provided that it has previously submitted a petition for rule making or experimental license application ... before the July 30, 1991 effective date of the Report and Order."

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[4] Id. at para. 39.

[5] FCC File No.s 1658-EX-PL-90, 1659-EX-PL-90, 1660-EX-PL-90, 1661-EX-PL-90, and 1662-EX-PL-90.